

# FAR 1030 June 2, 2018

\$25 Registration Fee \$10 Fee per day per attendee

## Rocketry competition open to college, university and amateur rocket enthusiasts.

- **30K Open class:** Build and launch a rocket to 30,000 feet using any motor, commercial or experimental
- **10K Open class:** Build and launch a rocket to 10,000 feet using any motor, commercial or experimental

### Competition Scoring:

- Closest to target altitude, mission success
- Must be recovered in launchable condition

Custom Trophies for 1<sup>st</sup>  
and 2<sup>nd</sup> in each category!

### Competition requirements:

- 5 lb ( 2.3 kg ) payload. Must be removable as a separate unit from the airframe. May include avionics, video cam, experiments, and ballast (for safety, any non functional ballast needs to be water).
- Minimum 3" ( 75 mm ) airframe
- Redundancy required in the following systems:
  - Dual igniters, dual ejection system per stage, dual altimeters; at least one altimeter must be COTS (commercial of the shelf) to be used for altitude verification.
- Dual deployment. Main deploys 500' – 1500' AGL. No component should exceed 100 ft / sec during recovery.
- Tracking system required. Either GPS telemetry, Radio Beacon or other approved in advance location method.
- 40,960 N-sec total impulse maximum limit 'O' impulse motor
- Choices of 5 scientific payload 'mission' options required (see below)

### Bring to the event:

- One page rocket specification sheet with payload option (See Sample provided)
- Pre-flight Checklist, Launch Checklist

### Competition consists of the following 3 phases:

1. Check In and inspection: **Friday June 1: 4 PM – 7 PM, and Saturday June 2: 7 AM – 9 AM.**
  - a. Your rocket will be inspected to insure that it meets safety standards.
  - b. The inspectors will review your specification sheet, pre-flight and launch checklists.
  - c. Your team will be interviewed about the rocket design/build process and discuss design optimization.
  - d. All rockets **must pass inspection prior to 9 AM Saturday** morning.
  - e. Once past inspection you will receive a flight card.
2. Flight and Recovery: **Saturday 9 AM – 5 PM** (WARNING: Wind typically picks up in the afternoon)
  - a. Present your flight card to the RSO.
  - b. You are limited to 1/2 hour pad time, so please be ready to fly. Bring own pad for longer time.
3. Post flight inspection: **Saturday 10 AM – 6 PM**
  - a. Bring your recovered rocket to the inspectors
  - b. Inspectors will record your measured altitude from the COTS altimeter and note it on your flight card.
  - c. Inspectors will examine your airframe to insure that it is flyable and make the appropriate notation on your flight card.

Launch rails provided: 10 foot 1010 rails, 20 foot 1515 rails, towers available per FAR website. Ignition system for solid motors provided by the event; hybrid or liquid please BYO. Please bring at least 2 igniters to the event for your rocket.

Free camping available on site Fri-Sun. Motels available in California City & Mojave 40 minutes away.

**\*\*\*Registration limited to the first 20 team registrations received\*\*\***

For 1030 information and registration: [rocketrycontest@gmail.com](mailto:rocketrycontest@gmail.com) and <http://www.friendsofamateurocketry.org> \*

\*Please note, the **FAR 1030** and the **FAR/Mars Society Launch Competition** are two different competitions/dates

### **the '5R' options for the required payload:**

Option One: Rover. Rocket must deploy a rover that leaves the rocket and travels a minimum of 10 feet from the rocket after touchdown with live video on the ground from rocket landing till at least ten feet of distance has been traversed since leaving the rocket.

Option Two: Remote Sensing. Upon landing, a remote video camera will record the landing surroundings in a 360 degree panorama for transmission to launch control. Note: 360 degree video cams do not qualify. The video must be autonomously rotated upon landing imaging the landing surrounding.

Option Three: Remote Sensing. Rocket must transmit live video from liftoff to touch down. Video must be recorded by the ground launch receiving station for viewing by the judges.

Option Four: Reconnaissance. Glider deployment below 400' altitude on rocket descent with live video transmission.

Option Five: Reconnaissance. Release of drone below 400' altitude or landing with live video and drone return to launch control by autonomous or remote control.

### **Scoring**

Lowest score wins

1 point per foot above or below target altitude will be assessed.

500 points will be added for failure to successfully complete payload option.

500 points will be subtracted for experimental ( non COTS ) motor use of student built motor encouraged.

### **Rocket specification sheet:**

Your specification sheet needs to have your school name and team lead and class competing for (10K or 30K).

Motor type (commercial or experimental) solid, liquid, or hybrid.

Motor class and total impulse (must be less than or equal to 40,960 Nsec).

Total weight and length of rocket.

Type of launch rail required we have 1010 and 1515 rails and adjustable towers for rockets without guides.

Type of altimeter/flight computer used competition scoring to be commercially made.

Payload description, weight and weight of water is used for ballast.

Tracking type (GPS, RF beacon and frequency, other).

Video transmission frequency.

Contact information (name, phone number, and email address).

To register, we need the following:

Team name, affiliated school, team leader, rocket motor type, which division (10,000' or 30,000' altitude), method of tracking and payload option.

Each member of your team planning on attending needs to print, sign and bring a FAR waiver:

[http://www.friendsofamateurretrocketry.org/Liability\\_Waiver.html](http://www.friendsofamateurretrocketry.org/Liability_Waiver.html)

Team leader must complete the online FAR launch request by May 22, 2018:

[http://www.friendsofamateurretrocketry.org/Launch\\_Request\\_2.html](http://www.friendsofamateurretrocketry.org/Launch_Request_2.html)

Please bring \$25 competition registration fee and \$10 per person FAR use fee.

Nearest motels are located in California City and Mojave. Overnight camping is available at the FAR site.

Thank you for registering,

the FAR 1030 competition coordinator